

Receptacle Layout to Code: teacher script

Electrical apprentices find every wall space and counter space in a full-size room and kitchen, then place the minimum receptacles the 6-ft and 24-in rules require.

Prep: Tape the room: 16 ft east-west, 14 ft north-south. South wall: 3-ft door starting 2 ft from the SW corner. East wall: 6-ft cased opening from 4 ft to 10 ft (measured from the SE corner). North wall: 5-ft fireplace centered. Tape a kitchen wall counter with three spaces: A = 30 in (wall to refrigerator), B = 9 ft continuous, C = 10 in (filler beside the range).

Min	Step and what to do	Ask	Listen for
0-5	Hook Read 210.52(A)(1) aloud. "Show me what 6 ft from a receptacle looks like on this floor."	Is the rule 12 ft between outlets or 6 ft from any point?	No point more than 6 ft from an outlet; that allows up to 12 ft between them.
5-20	Find the wall spaces Pairs walk the floor line clockwise from the SW corner, stop at each door, opening and fireplace, and measure each wall space (continuing around corners).	Does a wall space stop at a corner?	No; it continues around the corner until a doorway, fireplace or similar break.
20-30	Place receptacles Pairs place the fewest marks that keep every point within 6 ft, using the 6-ft stick.	What is the minimum for the 21 1/2-ft wall space from the fireplace around to the door?	Two: each outlet covers up to 12 ft (6 ft each side).
30-42	Counter Pairs measure counter spaces A, B and C and place receptacles under the 24-in rule.	Does space C need one?	No: it is under 12 in wide.
42-50	Edition check and exit Note that island and peninsula rules changed in recent editions, and this scenario has none. Exit ticket.	Who decides which edition applies?	The jurisdiction that adopted it; the inspector interprets it.

Common misconceptions

- **Learners may think:** Receptacles go every 12 ft starting at a corner. **Address it:** Start within 6 ft of each end of the space; the rule is about every point, not a fixed pattern.
- **Learners may think:** A doorway is just part of the wall. **Address it:** Doorways, fireplaces and similar openings break the wall space; measure each piece separately.

Supports

- Give the 6-ft and 24-in sticks so learners test coverage instead of computing it.
- Multilingual learners: label wall space, floor line, receptacle and counter space on the floor.
- Mobility: the measuring can be done with a rolling measuring wheel.

References

- **NEC 210.52(A) and (C)(1):** dwelling receptacle spacing; use the edition your jurisdiction adopted (island and peninsula rules changed in recent editions)
- **Perkins V (CTE):** postsecondary and secondary CTE program context

Scenario sheet

Living room 16 ft (east-west) x 14 ft (north-south). Walk the floor line clockwise from the SW corner. South wall: 3-ft door from 2 ft to 5 ft. East wall: 6-ft cased opening from 4 ft to 10 ft (from the SE corner). North wall: 5-ft fireplace, centered. No other breaks.

Kitchen wall counter: space A 30 in (wall to refrigerator), space B 9 ft continuous (no sink or range in it), space C 10 in (filler beside the range). Rules as quoted: 210.52(A)(1) no point along the floor line of a wall space more than 6 ft from a receptacle; 210.52(A)(2) wall space = 2 ft or more, unbroken by doorways, fireplaces and similar openings; 210.52(C)(1) each wall counter space 12 in or wider, no point more than 24 in from a receptacle.

LEARNER SHEET • RECEPTACLE LAYOUT TO CODE

Name _____ Date _____

Wall space (from - to)	Length	Receptacles

Counter space	Length	Receptacles
A		
B		
C		

Exit ticket

1. Under 210.52(A)(1), what is measured, and from where?

2. A 14-ft wall space with no breaks. Minimum receptacles?

3. A 30-in wall counter space. Minimum receptacles?

Answer key

Wall space	Length	Minimum
3-ft door, south wall → 6-ft cased opening, east wall	15 ft	2
6-ft cased opening, east wall → 5-ft fireplace, north wall	9.5 ft	1
5-ft fireplace, north wall → 3-ft door, south wall	21.5 ft	2

Room total: 5 receptacles (each covers up to 12 ft: within 6 ft each side).

Counter space	Length	Minimum
A	30 in	1
B	108 in	3
C	10 in	0

Counter total: 4 (each covers up to 48 in; C is under 12 in, so none).

Exit ticket

- Under 210.52(A)(1), what is measured, and from where?

Answer: The distance along the floor line of the wall space, from any point to the nearest receptacle: no more than 6 ft.

- A 14-ft wall space with no breaks. Minimum receptacles?

Answer: 2.

- A 30-in wall counter space. Minimum receptacles?

Answer: 1.

Scoring: 1 point each, plus 1 for a correct full-room count on the floor. 3 or more = secure.

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